



# NORTHWEST OREGON AREA ECOLOGY GROUP NEWSLETTER

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## Eugene BLM Initiates Oak/Pine Habitat Restora- tion in the Willamette Valley



In the foothills of the Southern Willamette Valley, the Bureau of Land Management (BLM) Eugene District, and six non-federal partners are implementing a project to restore and conserve, unique Oak/Pine Woodlands Habitat. The goal of the project is to develop and implement restoration techniques that will improve habitat conditions for Oregon white oak, ponderosa pine and wayside aster (*Aster vialis*). The project is being accomplished through a grant from the National Fish and Wildlife Foundation (NFWF) and matching in-kind services of non-federal partners that include: Institute for Applied Ecology, Salix Associates, Integrated Resource Management, Oregon Herpetological Society, Friends of Buford Park, Northwest Habitat Institute, and Oregon State University.

Agricultural and urban land conversion, past timber harvest and aggressive fire suppression have all led to the degradation, fragmentation and loss of this habitat type which was once wide spread throughout the region. Oak woodlands provide critical habitat for a variety of threatened, endangered and sensitive plant and animal species including Bureau of Land Management Sensitive species. Recently, increased awareness and concern has created interest by state and federal agencies and private organizations to both slow the loss and actively restore the remaining areas of oak habitat.

Four oak/pine study sites were selected and baseline data were collected at each site to characterize vegetation, as well as bird, reptile, and amphibian communities. One of these sites was selected as a demonstration area to implement and test various restoration treatments. A comprehensive restoration plan was developed that identified goals and management actions for the 20-acre site. Experimental plots were established to monitor the response of wayside aster and other native species to thinning and fire, and to evaluate the effectiveness of transplanting and seeding of native plants. Long-term monitoring of the site is planned in order to evaluate the success of treatments and monitor response of native and non-native vegetation over time. The first phase of treatments was implemented this year on seven acres which included: cutting and girdling conifers to release oak and pine trees, removal of shrubs and invasive weeds, hand-piling and burning of slash, and creating brush piles and snag trees for wildlife. Other treatments still planned for the site include; prescribed burning on portions of the area and re-seeding and planting of native vegetation in disturbed areas.

Based on the results of monitoring the BLM will evaluate and adapt its management approach and techniques for future treatments. The contributions of partners with a variety of perspectives and expertise contributed greatly to the success of this project. As a result of this partnership, the BLM and its partners exchanged ideas and learned new approaches and methods for achieving restoration goals. The BLM plans to utilize this demonstration site to educate other land managers



## Preliminary Results from Oak Habitat Sampling on Willamette NF

Jenny Lippert, Forest Botanist, Willamette National Forest

Jane Kertis, from the NW Oregon Ecology Group, Jenny Lippert from the Willamette NF Botany Program and awesome contractor John Koenig developed a prototype sampling methodology for oak habitats in 2002.

The first part of the project entailed mapping oak habitats on the Forest. We enlisted the help of Tim Bailey, former planner on Middle Fork Ranger District, in drawing sites on a map and stratifying them into one of 3 types: oak forest, oak savannah and rock garden with oak border.

Ten permanent plots were established. Basic location data and soil pits were dug. A 52-foot radius from plot center was used for species cover and composition. Plots were read both in May and in June. A variable width radius plot was used to collect data on live/dead trees and downed trees. Most plots had a 59-foot radius. Plot radius jumped to 104-foot in the savannah to collect tree/down wood data. In the forest where there were many trees, the radius was scaled back to 37'.

Habitat types ranged from almost pure oak forest to oak/mixed conifer forest to savanna to riparian meadow and rock garden.

Soil depths ranged from 13-37.5 inches in depth. Many had hardpan cased by cobbles, bedrock or hard clay. Forested sites generally had deeper soils and fewer restrictive layers.

Species associated with oak included California fescue, California oatgrass, blue wildrye. California brome and Roemer's fescue were present at several but not all sites. The dominant shrub in most plots was poison oak, although it was absent in a few plots. Other dominants included Oregon grape, serviceberry, ocean spray, snowberry, Nootka rose. Herbaceous species found in most plots include strawberry, camas, yarrow, sweet cicely, nemophila, yerba buena and yellow iris. Common weeds include Scot's broom, St. John's-wort, oxeye daisy and wild carrot.

In many plots, it was evident that the climax community, often Douglas fir/Poison oak plant association, was taking over former oak habitat. In these sites, most of the dead and down is oak. There little evidence of recruitment in seedlings and saplings; the dominant large trees are Douglas fir, pine and incense cedar. In other sites there seemed to be good oak recruitment.

This plot data may be useful in helping prioritize restoration by identifying in which sites oak is really at risk of being lost. It may also be helpful in identifying high priority native species for use

## Monitoring for Forest Management Unit Scale Sustainability Recommendations from the Local Unit Criteria & Indicator Development (LUCID) Test

### Background

The question of sustainability has become a key consideration in most human endeavors. The key question is not how much should we harvest or how much should we protect, but rather is the overall system sustainable. Many organizations, nations and industrial groups have been trying to develop a set of criteria and indicators (C&I) to assess sustainability of forest ecosystems. The 1992 United Nations Conference on Environment & Development in Santiago, Chile, led to an international agreement to develop criteria to assess sustainable ecosystem management. The Montreal Process Working Group took the lead in this effort with their membership of 12 countries, including Mexico, Canada and the United States, covering over 90 percent of the world's temperate and boreal forest. In 1995, the US agreed to use the Montreal Process C&I to measure national progress in achieving the goals of sustainable forest management.

Although much of the initial focus on C&I came from the need to report both nationally and internationally on sustainable forest management, there was a growing realization that sustainability issues

are multi-scaled and that the national goals of sustainability rest, in a large part, on the actions that are carried out on the forest management unit (FMU) scale. As a first step towards using FMU-scale C&I in North America, the US Forest Service, in cooperation with the Centre of International Forestry Research (CIFOR), conducted a C&I test in an area including the Boise National Forest in 1998. The CIFOR-NA test (Boise test) refined and adapted the CIFOR local unit level C&I set to the social, economic and ecological conditions of North America. Based on this preliminary test, the Forest Service Local Unit Criteria and Indicator Development (LUCID) test was chartered by the Chief in 1999.

The LUCID pilot project was conducted from 1999 through 2002 by the USDA Forest Service Inventory and Monitoring Institute in conjunction with eight national forests on six sites to appraise the feasibility of monitoring sustainable systems at the forest management unit (FMU) scale. The LUCID test would further refine the criteria and indicators selected during the Boise test to local conditions and would determine steps to implement the local unit measures of sustainability nationwide and how they link to the national level (Montreal Process) C&I.

## Purpose

Ultimately, the purpose of the project was to provide forest managers and collaborators with a forest-scale monitoring program for sustainable social, economical and ecological systems that can be used to improve Forest management plans, enhance collaborations between National Forests and other government agencies, and to relate forest plan outcomes with regional and national C&I trends. The Mt Hood National Forest LUCID team used the pilot test as an opportunity to begin building relationship with public entities that share common interests in the sustainability of resources, not just within the boundaries of the national forest, but in the surrounding areas and communities. As a result, Portland State University became full partners with the Mt Hood's LUCID team.

In 2001, the Inventory and Forest Monitoring Institute (LUCID core team) completed analysis of the results from the 6 test sites to identify core and unique indicators, measures and analytical techniques. A final report was completed in April 2002.

## Key Findings from the LUCID pilot test:

The LUCID pilot test concluded that sustainability monitoring at the FMU scale is possible and provides valuable information for forest planning and management.

The LUCID Project identified a core systems framework of 3 principles, 16 criteria and 58 indicators for use on National Forests and Grasslands as the basis for FMU-scale monitoring. Measures were selected that met local conditions and questions.

FMU scale sustainability monitoring could provide a comprehensive monitoring program for managers to use in decision making and planning including where to prioritize monitoring efforts and management actions which would improve sustainable conditions.

Provided an impetus to move our way of thinking about the forest in the direction of systems thinking and the sustainability of systems. Learned about how much we do and don't know about sustainability. The development of measures and setting of standards along with the ensuing discussions about sustainability and interrelationships was a big value to the Forest.

FMU scale sustainability monitoring could be used to support a collaborative approach to forest planning.

FMU scale sustainability monitoring could be used as a tool to help identify desired future system conditions, to analyze existing FMU condition and understanding the place of the National Forest in a larger context.

## Next Steps for Inventory and Monitoring Institute:

Look at how a LUCID like process might be implemented agency wide.

Identify research needs related to local level C&I monitoring.

Examine linkages between FMU-scale monitoring and national/international level monitoring (establish linkages to the Montreal Process)

## Next Steps for the Mt Hood NF:

Continue sustainability assessment to identify areas that are contributing to sustainability and identify area that may be improved through adaptive management. This would include a peer review of the measures and standards and continued development of the analytical model to better understand the integration of the social, economic and ecological indicators.

Continue data collection in the proximate zone (area of influence) through coordination with other agencies and city and county governments.

Prepare a review of the current Mt Hood Forest Plan monitoring program with the proposed C&I list.

Incorporate sustainability monitoring into the Forest Plan monitoring program and Plan revisions.

Share the Forest's experience with the LUCID project with other Forests who would be interested in beginning a LUCID like process for sustainability monitoring.

Review ecological indicators with the ecology

## Get Involved! The following working groups are always looking for interested participants:

### Fire Ecology Working Group

Contacts: Jane Kertis (jkertis@fs.fed.us or 541-750-7192) or Hugh Snook ( Hugh\_Snook@blm.gov or 503-315-5964)

This group has been meeting for almost 2 yrs now. They co-sponsored a fire ecology conference for western Oregon (May 02), and are currently developing a library of fire ecology literature. They have 2 info sharing meetings a year on special topics (e.g. National Fire Plan), and one field trip

### Special Habitats Working Group

Contacts: Jane Kertis (jkertis@fs.fed.us or 541-750-7192) or Hugh Snook ( Hugh\_Snook@blm.gov or 503-315-5964)

This group just started meeting this year. They are working on mapping and inventorying special habitats in NW Oregon. They have 2-3 info sharing meetings/yr and a field

# NORTHWEST OREGON ECOLOGY GROUP PROJECT UPDATES

## Stand Development and Successional Pathways of Northwest Oregon Forests

### Project Description:

Describe the range of stand components (structure and composition) that currently exists across northwest Oregon. Develop successional pathway models for the range of vegetation types that occur across northwest Oregon. The monies allocated for this project in FY02 were reallocated to help boost fire suppression costs so no progress was made in that fiscal year. In FY03, Current Vegetation Survey data for the Mt. Hood, Willamette and Siuslaw National Forests, and Salem and Eugene BLM Districts, and other ecology databases were used to classify and describe the current stand conditions across NW Oregon federal lands. A process for teasing apart CVS data into similar seral condition was designed and implemented. Attributes of structure (e.g. basal area, quadratic mean diameter, tree density, size class distribution)



and composition (hardwood/conifer cover, dominant species and indicator species cover) are being used to describe current stand conditions. This information is being summarized at the plant association group/sub-series levels to assess appropriate resolution to develop successional pathways. Draft successional pathways for 2 plant association groups/sub-series will be developed using chronosequence and stand development modelling approaches. These pathways will include common trajectories under non-managed and managed scenarios and described using structural and compositional attributes. We will continue developing successional pathways for additional plant association groups in FY04. The goal is to develop pathways for every vegetation type located in northwest Oregon. The project completion date is FY06.

## Sustainability Monitoring for the Mt Hood N.F. & Zones of Influence

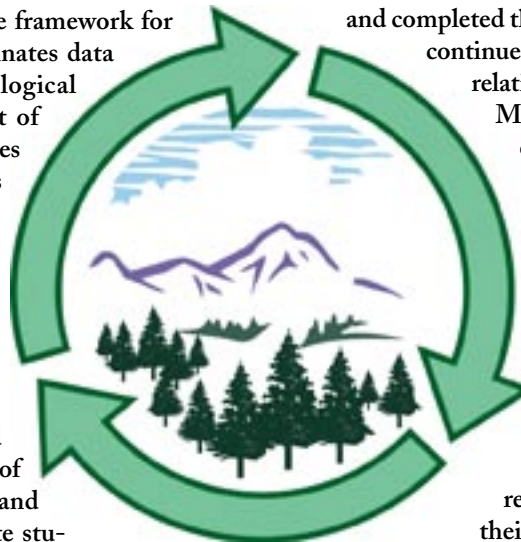
### Project Description:

This project provides ecological input into refining the Principle, Criteria, Indicators and Measurements for sustainability monitoring for the Mt Hood N.F. and its zones of influence. It also provides ecological input into assessing the Mt. Hood's current monitoring program as compared to the framework for sustainability monitoring, and it coordinates data collection and documentation for ecological measures. This includes development of white papers and other reporting techniques to communicate the utility of the data as a current management tool and for long term monitoring.

The project coordinator participates as the ecological representative in sustainability assessments for the Mt Hood. This includes: ● Initiating coordination with other agencies for data sharing and data merging. ● Initiating the building of partners for sustainability monitoring and coordination. ● Assisting PSU graduate students in the development of their thesis projects and applicability to Mt Hood management. ● Providing ecological information & technical expertise to Gary Larsen, the regional representative to the state Montreal C&I.

In FY01, the Forest completed the pilot test for the LUCID project. In FY02, the Inventory and Forest Monitoring Institute (IMI) completed analysis of the results from the 6 pilot test sites to identify core and unique criteria and indicators, analytical

techniques and to improve monitoring process, and to examine the relationship between FMU scale monitoring and forest management at multiple scales. A final report was completed in April 2002. The Forest continued work on data collection to populate the C&I model, refinement of the measures and reference values and completed the initial sustainability assessment. In FY03, continued assessment and documentation of the inter-relationships of key indicators in the context of the Mt Hood's themes (management issues) testing different synthesis approach and showing explicit findings related to the Mt Hood. Began field test of a sustainability framework that takes a real problem, looks at the LUCID criteria and indicators that are critical factors (having the most influence on the problem) and the relationships within and across the three domains (ecological, social and economic). The end product is a management tool that gives managers information and options to how best to invest resources to gain the greatest possible return on their investment in solving the problem within the ecosystem sustainability context. Continuing partnership with PSU including the potential for 2 Master thesis projects. Meeting with IMI in April to assess the current Forest Plan monitoring plan and look at transitioning the report from implementation/accomplishments to reporting on key questions of sustainability on the Mt Hood NF using a systems-based approach. Later this year, will develop framework and leadership agreement for sustainability monitoring on forest which then could be used as a model elsewhere. This is an ongoing project.



## Riparian vegetation classification

### Project Description:

This is a wetland and streamside plant community classification project for NW Oregon. It describes communities that occur in non-harvested riparian areas with their associated environmental variables.

In FY03, preliminary classifications for Westside Cascades and North Coast streamside communities were completed by winter. These extended and revised the previous Mt. Hood N.F. riparian community classification and the draft classification for the Siuslaw N.F. Over 2000 plots were analyzed. About 850 of those plots are included in the wet-



land classification by Oregon Natural Heritage Program ecologist John Christy. He is bringing in further newly collected as well as previously unanalyzed data from higher elevation Cascade wetlands, and additional wetland types from the Columbia River and the Coast. The wetland classification will incorporate data from the Cascade crest bioregion as well as Willamette and N. Coast provinces.

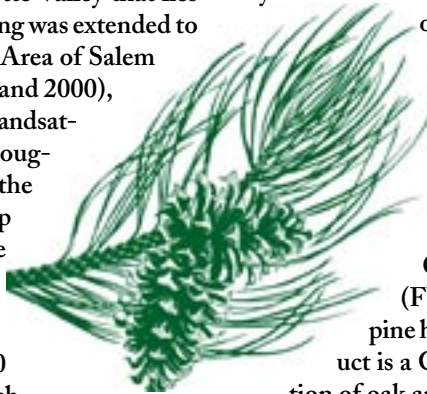
The Draft Wetland and Riparian Classifications document is due for review mid-summer 2003. A draft GIS model of stream-associated plant community distribution will also be out for review by

## Oak and Pine Habitat Inventory, Mapping and Partnership Planning Proposal for Northwest Oregon

### Project Description:

In FY02 mapping of oak and ponderosa pine stands were done for the eastside fringe portion of the Willamette Valley that lies within Eugene BLM District. In FY03 mapping was extended to include portions of the Marys Peak Resource Area of Salem BLM. The approach uses aerial photos (1995 and 2000), orthophoto quads (USGS DOQ), and NHI's Landsat-TM imagery to identify and map oak/pine/Douglas-fir stands. The orthophoto quads serve as the map base, and all stands regardless of ownership are mapped. Field visits are made to determine classifications and to verify each vegetation class mapped.

The minimum mapping unit is about 2ha (5.0 acres). The classification scheme and approach generally followed that developed by Klock et al. (1998) for the Willamette Valley. Attributes that went into the mapping process include composition (percent of stand compo-



sition in oak and/or pine) and structure conditions (size class, canopy cover). This project started with known sites identified by BLM that occurred in the fringe area and the map was built out from there. The Northwest Habitat Institute also coordinated with the BLM and NW Oregon Ecology group on determining the final vegetation classifications that were used to develop this map.

Future mapping on the Willamette National Forest (FY04), Mt. Hood National Forest and Columbia River Gorge National Scenic Area (FY05) should complete the mapping for oak and pine habitat across northwest Oregon. The final product is a GIS coverage of the current extent and distribution of oak and ponderosa pine stands across federal lands in northwest Oregon. The mapping effort should help increase the awareness of these unique habitats, and possibly identify opportunities for willing landowners to pursue conservation activities

## Collecting ecological data in oak and pine habitats on federal lands in northwest Or-

### Project Description:

In FY03 we collected existing information on oak and pine vegetation into a common database. We are also obtaining data from adjacent areas (Willamette Valley, Puget Sound, and SW Oregon). We will perform some multivariate analyses to determine initial community types and their distribution patterns. We then will perform an information



needs analysis among users, and develop a uniform strategy for sampling across NW Oregon. The goal for FY04 is to begin sampling the full range of existing oak and pine sites, and collect information that will allow us to reconstruct stand types to better aid in restoration activities. A guide of current and reconstructed information on oak and pine communities will be produced in FY06.

**Collaborate with other governmental, educational, and conservation organizations to disseminate information, develop educational materials, and share resource expertise in restoration planning and implementation.**

**Project Description:**

In FY03 we are working with the American Bird Conservancy (who have obtained a grant), Soil and Water Conservation Districts, State University Extension Service and other interested parties to complete a coordinated oak restoration guidebook for private landowners. The manuscript will be completed in 2003. The objective of the guide is to inspire landowners



to undertake restoration and provide them with tools, resources and contacts to assist them in their efforts. Eugene District BLM is currently developing an educational component of their current Oak/Pine Demonstration Project as required under the National Fish and Wildlife Foundation Grant received in FY2001.

## **Fire History and Fire Regimes of the Willamette Valley Fringe and Foothills**

**Project Description:**

This project will reconstruct regional variation in historical fire regimes in the foothills of the Coast and Cascade Ranges that fringe the Willamette Valley and will reconstruct the historical stand structures and compositions that resulted from these fire regimes.

This project was funded through National Fire Plan monies for FY02 and FY03 activities. In FY02 we developed a sampling protocol for collecting fire history information. The study area included all the townships that contained Salem or Eugene BLM lands that were included within, or intersected the EPA Willamette Valley Ecoregion (and formed the Valley and Foothills fire zone for fire regime classification). Potential sites were selected using the following criteria: clearcut units that were cut less than 16 years ago whose pre-cut stand was greater than 100 years old. A grid of ° townships was created, with the goal to fill as many cells as possible. There were 108 potential cells across the study area.

We sampled 33 sites (33 ° township cells) across BLM owned lands

in the Valley fringe to get a broad brush idea of the fire history and fire regimes throughout the area. We have cut 21 sites to date. We found scarred trees at every cut site (180 total), with about 20% of sites containing evidence of 3 scars per tree. Scar ages (from field counts) range from 5-360 years ago. Tree ages from field counts (110 samples) range from 21-440 years old. About 70% of trees are less than 150 years old; 12% are greater than 200 yrs old.



In FY03 field crews will continue to sample throughout the area to finish fire history/fire regime distribution goals (expect adding approximately 20 sites). In addition, a subset of these sites (six ° townships; 2 units sampled per site) will be sampled to get a fine scale view of fire history, and describe stand structural and compositional characteristics of the range of fire regimes across the landscape.

FY04 is the final year of this project. Data will be analyzed, a formal presentation will be made to the Districts, and a report (and peer

## **NORTHWEST OREGON ECOLOGY GROUP WEB**

Look for the Northwest Area Ecology Group on the web. The exact web address is still not known, however, we will have our own page on the internet on the Siuslaw NF, Willamette NF, and Region 6 sites. Several projects will be accessible on this web site, including this newsletter, the Field Guide to the Forested Plant Associations of the Westside Central Cascades of Northwest Oregon, the Field Guide to the Forested Plant Associations of the Northern Oregon Coast Range, the Major Indicator Shrubs and Herbs on National Forests of Western Oregon and Southwestern Washington, and GIS maps and documentation of fire regimes and current condition classes of lands in northwest Oregon.





Sara Lovtang,  
Ecologist,  
Siuslaw and Willamette  
National Forests

**EDUCATION:** B.S. Environmental Science, SUNY College of Environmental Science and Forestry at Syracuse University; M.S. Forest Science, Oregon State University, with a minor in plant physiology.

**AREA OF EXPERTISE:** Plant ecology; fire ecology in the Ponderosa pine ecosystems of Eastern Oregon.

**RECENT PROJECTS:** Completing the editing and writing of the Field Guide to the Forested Plant Associations of the Westside Central Cascades of Northwest Oregon and the Field Guide to the Forested Plant Associations of the Northern Oregon Coast Range; putting the guides on the Forest Service internet website; working on a computer model of the way bitterbrush behaves after wildfire, mowing and prescribed fire treatments.

**THE BIGGEST ECOLOGICAL QUESTION ON HER MIND THESE DAYS:** The politics of which ecological issues get attention, which ones are shelved, and which ones are outright laughed at.

**AN ECOLOGIST THAT MOST INFLUENCES HER WORK:** Charles Darwin, for his sheer determination to plod onwards with few rewards.

**CONTACT INFORMATION:**

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Jeanne Rice,  
Sustainability Ecologist,  
Mt. Hood National Forest

**EDUCATION:** B.S. Forest Resource Management, HSU; and Natural Resource Institute, UWA, WSU, OSU.

**AREA OF EXPERTISE:** Silviculture and natural resource planning.

**RECENT PROJECTS:** Young stand thinning; Local Unit Criteria and Indicators Development (LUCID) and sustainability monitoring; Big huckleberry management.

**THE BIGGEST ECOLOGICAL QUESTION ON HER MIND THESE DAYS:** Integrating the social, economic and ecological dimensions of sustainability and applying it to decisions made for management of our resources.

**AN ECOLOGIST THAT MOST INFLUENCES HER WORK:** Chad Oliver, UWA for his work on stand dynamics and disturbance regimes; Nancy Diaz for her work on landscape ecology.

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David Alley,  
Ecology Field Tech,  
Siuslaw N.F. Supervisors Of-

**EDUCATION:** B.S. degree, Forestry / Env. Resource Management, Virginia Tech.

**AREA OF EXPERTISE:** Soil science primarily, forest ecology and fire ecology more recently, and hopefully watershed hydrology and eco-hydrology in the near future.

**RECENT PROJECTS WITH YOUR INVOLVEMENT/LEAD:** Willamette Valley Fringe fire history project, 2002/03; crew leader for Jane Kertis. Riparian plant community and soil profile classification, 2001; soil tech for Cindy McCain. Getting my toes wet with data analysis of false-brome expansion and a summary of inventory plots at the McKenzie Pass RNA, winter 2001.

**THE BIGGEST ECOLOGICAL QUESTION ON YOUR MIND THESE DAYS?** How may we best interpret the existence of old-growth stump remnants in second rotation stands in order to augment the available data from intensive sampling and dendrochronology of more recently harvested old trees? How can I break into grad school?

**AN ECOLOGIST THAT MOST INFLUENCES YOUR WORK:** Emily Heyerdahl of the R.M.R.S. in Missoula for the passion she puts into her work, her involvement in our project, and her frequent opportunities for business travel.

## Contact Information for the Northwest Oregon Area Ecology

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The NW Area Ecology Group relies on a variety of professionals throughout the area to support their activities. The following ecologists and biologists also contribute to the

Floyd Freeman, Salem BLM

Specialty:

Pat Ormsbee, Wildlife Biologist, Willamette National Forest.

Specialties: Bats.

Matt Hunter, Ecologist, Private Consultant.

Specialties: Amphibians and birds.

Bruce McCune, Botanist, Oregon State University.

Specialty: Lichens.

Linda Geiser, Lichenologist and Air Quality Specialist, Siuslaw National Forest.

Specialty: Lichens.

Tom O'Neil, Ecologist, Northwest Habitat Institute.

Specialties: Oak restoration, biodiversity data management.

Ed Arnett, Ecologist, Oregon State University.

Specialty: Bats.

Fred Hall, Plant Ecologist.

Specialty: Special Habitats.

Susan Haig, Ecologist, Oregon State University.

Specialty: Forest birds.

Walt Kastner, Silviculturist, Siuslaw National Forest.

Specialty: Tree diseases.

Ralph Garano, Aquatic Ecologist, Earth Designs Consultants.

Specialties: Wetlands and Watershed Ecology; aquatic entomology, limnology.

Dave DeMoss, Ecologist, Eugene BLM.

Specialty: Forest Ecology.

John Cissel, Research Coordinator, Willamette National Forest.

Specialty: Landscape modeling.